**Atsushi Nara**

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## Professional Preparation

Shimane University (Japan) Environmental Engineering B.S. 2000

University of Utah Geography M.S. 2005

Arizona State University Geography Ph.D. 2011

University of Oklahoma Geographic Information Science 2011-2014

## Appointments

2014- Assistant Professor, Geography, San Diego State University

2014- Associate Director, Center for Human Dynamics in the Mobile Age, San Diego State University

2014- Faculty Research Associate, Center for Information Convergence and Strategy, San Diego State University

2012-14 Research Scientist, Center for Spatial Analysis, University of Oklahoma

2011-12 Research Associate/Lecturer, Geography, University of Maryland College Park

2011 Postdoctoral Research Associate, Center for Spatial Analysis, University of Oklahoma

2010 Research Scientist, Engineering, University of Tokyo (Japan)

2008-10 Research Scientist, Digital Human Research Center, National Institute of Advanced Industrial Science and Technology (Japan)

2006 GIS Analyst, Urban & Environment Planning: Research and Consulting (Japan)

## Publications

# **Five Related Publications**

# Yuan, M., and Nara, A. (2015). “Space-Time Analytics of Tracks for the Understanding of Patterns of Life.” In M.-P. Kwan, D. Richardson, D. Wang, C. Zhou (eds), *Space-Time Integration in Geography and GIScience: Research Frontiers in the U.S. and China*, Dordrecht: Springer.

# Yuan, M., Nara, A., and Bothwell, J. (2014). “Space-Time Representation and Analytics.” *Annals of GIS*, 20(1), pp.1-9.

# Torrens, P.M., Nara, A. (2012). “Polyspatial agents for multi-scale urban simulation and regional policy analysis.” *Regional Science Policy and Practice*, 4(4), pp.419-445.

# Torrens, P.M., Nara, A., Li, X., Zhu, H., Griffin, W.A., and Brown, S. (2012). “An extensible simulation environment and movement metrics for testing walking behavior in agent-based models.” *Computers, Environment and Urban Systems*, 36(1), pp.1-17.

# Nara, A., Izumi, K., Iseki, H., Suzuki, T., Nambu, K., and Sakurai, Y. (2011). “Surgical workflow monitoring based on trajectory data mining.” In T. Onoda, D. Bekki, S. Tojo, Y. Ohsawa, T. Isozaki (eds), *New Frontiers in Artificial Intelligence*, pp.283-291.

**Five Other significant publications**

# Izumi, K., Nara, A., Iseki, H., Suzuki, T., Nambu, K., Chinzei K., Murakawa, M., and Sakanasi, H. (2011). “Workflow monitoring by data gathering from a surgical room and surgical strategic desk.” *The Journal of the Institute of Electronics, Information and Communication Engineers*, 94, 4, pp.288-293.

# Nara, A., and Torrens, P.M. (2011). “Trajectory Data Mining: Classification and Spatio-Temporal Visualization of Mobile Objects.” *Proceedings of the GeoComputation 2011*, University College London, UK, July 20-22.

# Nara, A., Izumi, K., Iseki, H., Suzuki, T., Nambu, K., and Sakurai, Y. (2009). “Surgical workflow analysis based on staff's trajectory patterns.” *Proceedings of the 1st Workshop on Modeling and Monitoring of Computer Assisted Interventions (M2CAI)*.

# Torrens, P.M. and Nara, A. (2007). “Modeling gentrification dynamics: A hybrid approach.” *Computers, Environment and Urban Systems*, 31, pp.337-361.

# Nara, A. and Torrens, P.M. (2007). “Spatial and temporal analysis of pedestrian egress behavior and efficiency.” *Proceedings of Association of Computer Machinery (ACM) Advances in Geographic Information Systems,* pp.284-287.

#### Synergistic Activities

1. Development of an agent-based simulation model of pedestrian crowds under emergency evacuation situations and a suite of trajectory data mining and visualization methods for investigating pedestrian egress behaviors on streets.

2. Development of algorithms, toolkits, an integrated database management system, and a web portal that help GPS offender monitoring programs by fusing multiple data sources, analyzing and visualizing the datasets, and finding patterns of routine activities, abnormal tracks, potential offenses, and potential social networks.

3. Development of an online monitoring system and trajectory data mining methods to track and analyze movement characteristics of multiple surgical staff during a surgical operation for automatic recognition of surgical workflows.

4. Development of curricular materials for undergraduate and graduate level courses in GIScience.

5. Active and frequent external referee for papers on the connections between Geographic Information Science, human dynamics and disaster events to journals such as *International Journal of Geographic Information Science*, *Georisk*, *Spatial Cognition and Computation*, and *Computers, Environment and Urban Systems*.